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EXAMINER

NGUYEN, HAI V

ART UNIT PAPER NUMBER

2142

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/820,817

Applicant(s)

VICENTE ET AL.

Examiner

Hai V. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2004.
2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16, 18-26, 28 and 29 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-16, 18-26, 28 and 29 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office is in response to the communication received on 18 October 2004.
2. Claims 17, 27 are cancelled.
3. Claims 1-16, 18- 26, and 28-29 are presented for examination.

Response to Arguments

4. Applicant's arguments filed 18 October 2004 have been fully considered but they are not deemed to be persuasive.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 29 recites the limitation "the medium according to claim 27" which is cancelled, in claim 29. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(e) that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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8. Claims 1-16, 18-26, and 28-29 are rejected under 35 U.S.C. 102(e) as being anticipated by **Natarajan et al. US patent no. 6,505,244 B1.**

9. As to claim 1, Natarajan teaches substantially the invention as claimed, including a system for host-based QoS provisioning, comprising:

a host system connecting to a network, said host system initiating a data flow associated with an application running in the host system, said data flow being sent to said network (*Abstract, Fig. 2; col. 2, line 15 – col. 3, line 42*); and

a centralized QoS provisioning mechanism for enforcing flow control on said data flow of said application originated from said host system, by establishing a QoS provisioning policy for said application, wherein said centralized QoS provisioning mechanism is coupled to said host system; and said flow control is enforced on said data flow of said application using a filter and flow control constructed for said application based on the QoS provisioning policy (*Abstract, Fig. 2; col. 2, line 15 – col. 3, line 42; col. 8, lines 8-20; col. 14, lines 1-50*).

10. As to claim 2, Natarajan teaches, wherein said host system comprises:

a server (*Fig. 2, item 214; Fig.3, item 314; Fig. 4, item 414*); and

at least one client (*Fig. 2, item 202; Fig.3, item 302; Fig. 4, item 404*) capable of communicating with said server.

11. As to claim 3, Natarajan teaches, wherein said centralized QoS provisioning mechanism includes:

at least one network traffic control agent that is responsible for enforcing said flow control, each of said at least one network traffic control agent running on one of

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said at least one client, imposing said flow control on said data flow initiated by said application running on said one of said at least one client (*col. 8, lines 20-38*);

a network traffic control administrator, (*Fig. 2, item 260; Fig.3, item 360; Fig. 4, item 460*), capable of running on said server, for conducting centralized QoS provisioning by enforcing said flow control via said at least one network traffic control agent; and

a policy server (*Fig. 2, item 254; Fig.3, item 354; Fig. 4, item 454*) for storing said QoS provisioning policy.

12. As to claim 4, Natarajan teaches, a console (*col. 5, line 54 – col. 6, line 7*) for performing user-level QoS provisioning; and a network performance related statistics collector (*Fig. 2, item 270*) for collecting network performance statistics from said host system, said network performance statistics including per flow statistics with respect to said application and local network performance statistics which are utilized by said network traffic control administrator to revise the QoS provisioning policy for said application (*col. 7, line 12 - col. 8, line 20*).

13. As to claim 5, Natarajan teaches a system for a network traffic control agent, including: a communication unit for interacting with a network traffic control administrator wherein said network traffic control administrator is running on a server in a host system comprising; said server and at least one client (*col. 8, lines 20-38; col. 13, lines 30-58*);

a filtering unit (*plug-in policy agent*), residing on one of said at least one client, for filtering an application running on said one client based on a filter, said filtering unit

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constructed based on a QoS provisioning policy established for said application and received from said network traffic control administrator via said communication unit, (*col. 8, lines 8-38; col. 13, lines 30-58*); and

a flow control enforcement unit (*SLA*) for enforcing flow control on data flows generated by said application according to a flow specification, said flow control enforcement unit constructed based on said QoS provisioning policy and received from said network traffic control administrator via said communication unit, wherein said application and said network traffic control agent running on said one client in said host system (*col. 8, lines 8-38; col. 13, lines 30-58*).

14. As to claim 6, Natarajan teaches a storage (*Fig. 2, item 252*) for storing said flow specification received from said network traffic control administrator; and a flow monitoring unit (*Fig. 2, item 262*) for collecting per flow information from said data flows of said application and sending said per flow information to said network traffic control administrator via said communication unit that is utilized to revise the QoS provisioning policy.

15. As to claim 7, Natarajan teaches a system for a network traffic control administrator, comprising:

a communication unit (*Fig. 2, item 260*) for communicating with at least one network traffic control agent;

a per-flow usage analysis unit (*Fig. 2, item 254*) for analyzing per-flow information collected by said at least one network traffic control agent and received via said communication unit to generate peer-flow usage statistics;

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a local network usage information analysis unit (*Fig. 2, item 254*) for analyzing the network performance statistics to generate local network usage statistics;

a QoS provisioning unit (*Fig. 2, item 254*) for conducting centralized QoS provisioning on a data flow associated with an application through a QoS provisioning policy generated for said application;

a flow control instruction unit for constructing a filter and a flow specification for said application based on said QoS provisioning policy established for said application, said filter and said flow specification being sent, via said communication unit, to said at least one network traffic control agent to enforce flow control on said data flow generated by said application (*col. 8, lines 8-20; col. 14, lines 1-50*); and

a QoS provisioning policy (*Fig. 2, item 254*) updating unit for updating QoS provisioning policy with respect to said application based on application-based feedback driven adaptation using said per-flow usage statistics and said local network usage statistics (*col. 14, lines 1-50*).

16. As to claim 8, Natarajan teaches, wherein said QoS provisioning policy updating unit includes:

a manual user-driven updating unit for performing manual update of said QoS provisioning policy to generate an updated QoS policy for said application (*col. 32, line 12 – col. 33, line 56*);

an automatic feedback-driven adaptation unit for dynamically adjusting said QoS provisioning policy based on said local network usage statistics and said per-flow usage

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statistics to generate said updated QoS policy (*col. 29, line 59 – col. 30, line 43; col. 32, line 12 – col. 33, line 56*); and

a flow control instruction unit for constructing an updated flow specifications to be used to enforce flow control on said data flow of said application based on said updated QoS policy for the application (*col. 8, lines 1-20; col. 14, lines 1-50; col. 29, line 59 – col. 30, line 43; col. 32, line 12 – col. 33, line 56*).

17. As to claim 9, Natarajan teaches a method for host-based QoS provisioning, comprising: performing centralized QoS provisioning on a data flow associated with an application running in a host system by generating QoS provisioning policy with respect to said application (*col. 14, lines 1-50; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*);

constructing a filter and a flow specification according to said QoS provisioning policy, said filter and said flow specification being used to enforce flow control on said data flows of said application, wherein said filter and said flow specification are constructed adaptively based on the QoS provisioning policy updated through application-based feedback-driven adaptation (*col. 14, lines 1-50; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*);

sending said filter and said flow specification to a network traffic control agent (*col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*);

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receiving, by said network traffic control agent, said filter and said flow specification (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*);

filtering, by said network traffic control agent, said application using said filter (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*); and

enforcing said flow control based on said flow specification, on said data flows of said application (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*).

18. As to claim 10, Natarajan teaches, further including:

generating statistics relevant to the performance of said data flow and said host system (*col. 8, lines 1-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*);

generating an updated QoS provisioning policy with respect to said application based on said statistics (*col. 8, lines 1-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*);

constructing an updated flow specification for said application according to said updated QoS provisioning policy (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*); and

sending said updated flow specification to said network traffic control agent to enforce flow control on said data flow of said application (*col. 8, lines 1-38; col. 13, line*

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45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56).

19. As to claim 11, Natarajan teaches, wherein said statistics includes at least one of per-flow usage statistics derived based on per flow information collected by at least one network traffic control agent (col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56); and

local network usage statistics derived based on network performance statistics collected by a network performance statistics collector (col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56).

20. As to claim 12, Natarajan teaches a method for a network traffic control agent, comprising:

receiving a filter and a flow specification from a network traffic control administrator, said filter and said flow specification being constructed for an application based on a QoS provisioning policy established for the application (col. 8, lines 1-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56);

filtering said application running on a client on which said network traffic control agent resides, said application initiating a data flow (col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56); and

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enforcing flow control on said data flow of said application based on said flow specification, wherein said filter and said flow specification are constructed based on a QoS provisioning policy that is dynamically updated based on per flow usage statistics (*col. 8, lines 1-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*).

21. As to claim 13, Natarajan teaches, further including:

receiving an information collection instruction from said network traffic control administrator (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*);

monitoring said data flows initiated from said application to collect per flow information specified in said information collection instruction (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*); and

sending said per-flow information to said network traffic control administrator to be utilized for said dynamically updated per flow usage statistics (*col. 8, lines 1-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 32, line 12 – col. 33, line 56*).

22. As to claim 14, Natarajan teaches a method for a network traffic control administrator, comprising:

receiving a request for centralized QoS provisioning associated with an application, said application being installed on a client where a network traffic control agent resides (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col.*

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15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56);

receiving a user-level provisioning specification corresponding to a QoS provisioning policy associated with said application (col. 8, lines 1-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56);

constructing a filter for said application based on said QoS provisioning policy associated with said application (col. 8, lines 1-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56);

constructing a flow specification for said application based on said QoS provisioning policy with respect to said application (col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56); and

sending said filter and said flow specification to said network traffic control agent (col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56).

23. As to claim 15, Natarajan teaches, further including:

receiving per-flow information from at least one network traffic control agent (col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28,

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line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56);

generating per-flow usage statistics by analyzing said per-flow information received from said at least one network traffic control agent (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56);*

receiving network performance statistics from a network performance statistics collector (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56);* and

generating local network usage statistics by analyzing said network performance statistics received from said network performance statistics collector (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56).*

24. As to claim 16, Natarajan teaches, further including updating said QoS provisioning policy with respect to said application by utilizing the local network usage statistics and the per flow usage statistics (*col. 8, lines 1-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56).*

25. As to claim 18, Natarajan teaches, wherein said updating said QoS provisioning policy includes:

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analyzing said per-flow usage statistics and said local network usage statistics (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56*);

entering said updated QoS provisioning policy for said application according to at least one of said per-flow usage statistics and said local network usage statistics (*col. 8, lines 1-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56*).

26. As to claim 19, Natarajan teaches, wherein updating said QoS provisioning policy includes:

performing said automatic QoS provisioning policy adaptation in a plurality of cycles (*col. 8, lines 1-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56*);

analyzing, in each of said plurality of cycles, said per flow usage statistics and said local network usage statistics (*col. 8, lines 20-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56*); and

generating, in each of said plurality of cycles, said updated QoS provisioning policy for said application based on results of said analyzing (*col. 8, lines 1-38; col. 13, line 45 – col. 14, line 19; col. 14, line 20 – col. 15, line 18; col. 28, line 39 – col. 29, line 36; col. 29, line 59 – col. 31, line 57; col. 32, line 12 – col. 33, line 56*).

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27. Claim 20 is corresponding computer readable medium claim of claim 9;

therefore, it is rejected under the same rationale as in claim 9.

28. Claim 21 is similar limitations of claim 10; therefore, they are rejected under the same rationale as in claim 10.

29. Claim 22 is corresponding computer readable medium claim of claim 12;

therefore, it is rejected under the same rationale as in claim 12.

30. Claim 23 is similar limitations of claim 13; therefore, it is rejected under the same rationale as in claim 13.

31. Claim 24 is corresponding computer readable medium claim of claim 14;

therefore, it is rejected under the same rationale as in claim 14.

32. Claims 25, 26, 28-29 are similar limitations of claims 15, 16, 18-19; therefore, they are rejected under the same rationale as in claims 15, 16, 18--19.

33. Further references of interest are cited on Form PTO-892, which is an attachment to this action.

Response to Arguments

34. Applicant's arguments filed 18 October 2004 have been fully considered but they are not deemed to be persuasive.

35. In the remark, Applicant argued in substance that:

Point (A), the prior art does not disclose, "*QoS information may be changed for specific applications*" in claim 1.

As to point (A), Natarajan discloses that, "When alerted to changes in network conditions, the policy engine 254 is then triggered to perform its application specific

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tuning function (col. 14, lines 1-4). Natarajan also discloses that, "The overall architecture of **the policy engine is such that it allows for application specific plug-in policies to be added or deleted from the system.** The policy server design is made modular so that decision tree modules can be added and deleted at will without disruption to the policy engine. Each application specific plug-in policy module (254b-254e) may be implemented as a plug-in to the policy server 254a. Application specific policy plug-ins include frame relay policies, ATM policies, dial up policies, traffic shaping policies, quality of service (QoS) policies, security policies, admin policies, SLA policies, etc. Examples of various application specific policy plug-ins are shown in FIG. 5C, and include an ATM policy plug-in 254b, a frame relay policy plug-in 254b, a dial up policy plug-in 254b, and a security policy plug-in 254e. The examples shown in FIG. 5C merely illustrate some of the various application specific policy plug-ins which may be attached to the policy server 254A (col. 14, lines 33-50).

Point (B), the prior art does not disclose, "*establishing a QoS provisioning policy for an application and a filter is constructed for the application based on the QoS provisioning policy*" in claim 1.

As to point (B), Natarajan discloses that "The overall architecture of the policy engine is such that it allows for application specific plug-in policies to be added or deleted from the system. The policy server design is made modular so that decision tree modules can be added and deleted at will without disruption to the policy engine. Each application specific plug-in policy module (254b-254e) may be implemented as a plug-in to the policy server 254a. Application specific policy plug-ins include frame relay

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policies, ATM policies, dial up policies, traffic shaping policies, quality of service (QoS) policies, security policies, admin policies, **SLA policies**, etc. Examples of various application specific policy plug-ins are shown in FIG. 5C, and include an ATM policy plug-in 254b, a frame relay policy plug-in 254b, a dial up policy plug-in 254b, and a security policy plug-in 254e. The examples shown in FIG. 5C merely illustrate some of the various application specific policy plug-ins which may be attached to the policy server 254A (col. 14, lines 33-50). Natarajan also discloses that, "In the network of FIG. 2, network element 204A may be any hardware or software component which has a measurable parameter that can be reported. **Examples of network elements include** routers, switches, hosts, modems, terminals, dial access servers, gateways, ports, channels, interfaces, circuits, processes, drivers, protocols, services, **applications**, etc. (col. 8, lines 8-20). The filter constructed for the application based on the QoS provisioning policy is merely a Service Level Agreement (SLA) policy for a specific application taught by Natarajan.

Conclusion

36. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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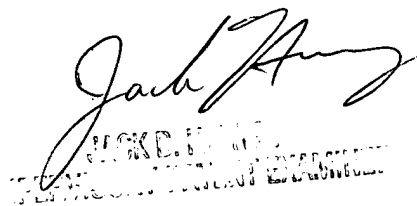
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai V. Nguyen whose telephone number is 571-272-3901. The examiner can normally be reached on 6:00-3:30 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Harvey can be reached on 571-272-3896. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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